median number of apheresis days was 1 (range 1 – 3). In 721 (88.7%) collections one day of apheresis was required to achieve the minimum number of HPCs. The median apheresis volume for day 1 collections was 20 (range 3.6 – 24) L. The correlation coefficient between the pre-collection peripheral blood CD34+ cell count and the final product CD34+ cell content is 0.69 ($p<.001$; Figure 1). The TVT estimate was highly predictive of the final product CD34+ count ($r=0.82$, $p<.0001$; Figure 2). A minimum of 2 x 10^6 CD34+ cells/kg was collected in 90.4% of collections.

Discussion: Using the correlation between the pre-collection peripheral blood CD34+ count and the final product HPC content, the TVT formula can accurately determine the blood volume to process during apheresis collection. This has resulted in reduced apheresis time, fewer apheresis days, and less nursing time. Ultimately, the TVT formula has allowed our program to improve our resource utilization by accurately predicating the required apheresis volume.

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Autologous Stem Cell Mobilization with Pegfilgrastim and Planned Plerixafor Is Equally Effective and Safer As Compared with Cyclophosphamide, Pegfilgrastim and Plerixafor

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Background: Autologous stem cell mobilization can be achieved using chemo-mobilization (CHM) or growth factors alone (cytokine-mobilization, CTM). Mobilization with pegfilgrastim and "just-in-time" plerixafor has been shown to be a successful strategy. Experience with pegfilgrastim and planned plerixafor is limited. We here describe our experience using two mobilization strategies with pegfilgrastim plus plerixafor (CTM) or cyclophosphamide, pegfilgrastim plus plerixafor (CHM).

Methods: We retrospectively identified patients who received an auto-SCT for a diagnosis of myeloma at TJU between July 2010 and June 2013. These 53 patients who had stem cell mobilization using either CHM (16 patients) with cyclophosphamide (4 grams/m^2), pegfilgrastim (12 mg) and plerixafor (0.24 mg/kg once daily until target dose collected or maximum of 4 days of apheresis), or CTM with pegfilgrastim plus plerixafor (37 patients). Plerixafor was only administered as an outpatient. We hypothesized that more patients in the CHM group reached the prescribed total CD34-positive stem cell collection as compared to the CTM group. To test this hypothesis we used the two-sample test on proportions. For the comparison of the median total CD34 cells/kg dose collection and the median number of apheresis days we used the Wilcoxon rank sum test and the t-test, respectively.

Results: There was no difference in patient age at transplant, sex, and myeloma subtype. The median number of prior induction therapies was similar; there was no significant difference in the prior exposure to lenalidomide, however as expected, bone marrow plasmacytosis was higher in the CHM group (6% vs. 2%). In the CHM group, 41% were hospitalized due to complication (typically neutropenic fevers) and thus only 9 patients (59%) received the planned dose of plerixafor as compared to 100% in the CTM group. There were no hospitalizations in the CTM group due to toxicity. CHM was associated with a significantly higher median total CD34+ cell collection (14.9 x 10^6/kg vs. 8.37 x 10^6/kg, $p=0.009$) (Table 2). CTM is associated with fewer collection days (median 1 day vs. 2 days, $p=.29$) and more patients achieving the target CD34+ cell dose of 6.0 x 10^6/kg (91.9% vs. 81.3%, $p=.26$).

Table 1.0 Collection of autologous stem cells

	Chemo-mobilization	Cytokine mobilization	p-value
Median CD34 cells/kg collected (in millions/kg)	14.9	8.37	.009
Median number of apheresis days (mean)	2 (2.13)	1 (1.76)	.29
Target dose achieved:	13 (81.3%)	34 (91.9%)	.26
Yes	3 (18.8%)	3 (10%)	
No			

Conclusion: The preferred method to mobilize autologous stem cells should be with pegfilgrastim and planned plerixafor since it is able to achieve the prescribed cell dose, is associated with less toxicity and risk of hospitalization. This analysis suggests that per 100 patients collected a total of 100 days of plasmaphresis could be avoided if all patients were mobilized with growth factors alone.

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Twenty Years of Autologous Stem Cell Transplantation in Diffuse Large B-Cell Lymphoma – a Single Center Experience

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Background: Patients (pt) with advanced stage and high International Prognostic Index (IPI) or relapsed/primary refractory diffuse large B-cell lymphoma (DLBCL) have an adverse prognosis and are frequently consolidated with autologous stem cell transplantation (SCT).

Aim: Evaluation of a single center experience with SCT in DLBCL.

Methods: Retrospective analysis of outcome of adult pt submitted to SCT in DLBCL, between October 1992 and December 2012. Data were collected from the database and the medical records.

Results: 152 SCT were performed in various histological subtypes of DLBCL, during this time period. Statistical analysis was performed in 113 pt with "classical" DLBCL and histological variants were excluded.

Median age at SCT was 49 years (16-67), 68 males/45 females. At diagnosis the majority of pt were in advanced stage (85%) and had an IPI 2 or 3 (47%, 30% respectively).